



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,733	08/21/2006	Takeyuki Suzuki	053253	7777

38834 7590 06/11/2007  
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP  
1250 CONNECTICUT AVENUE, NW  
SUITE 700  
WASHINGTON, DC 20036

EXAMINER
----------

TESKIN, FRED M

ART UNIT	PAPER NUMBER
----------	--------------

1713

MAIL DATE	DELIVERY MODE
-----------	---------------

06/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/553,733

Applicant(s)

SUZUKI, TAKEYUKI

Examiner

Fred M. Teskin

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-21 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20051020; 20060512.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

With entry of the preliminary amendment of October 20, 2005, claims 1-21 are currently pending and under examination herein.

The disclosure is objected to because of the following informalities: the term "weigh[t]" is misspelled in paragraph 0013.

Appropriate correction is required.

Claims 6, 8, 15, 18 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 18 each provide the limitation to "the acrylic resin". There is no adequate and proper antecedent basis for this limitation in the claims. Note that while claim 2 does recite "an acrylic resin", this matter is not properly incorporated via dependency in either claim 6 or 18.

Claims 8, 15 and 21 are directed to the composition according claims 1, 2 and 3, respectively, and add only the language "which is used for heat resistant joints". In the absence of any positive compositional limitation, it is unclear how the stated use serves to further limit the scope of the claimed invention. Clarification is required concerning the limiting significance of the "used for ..." recitations to the composition being claimed.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1713

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-287782 (JP '782) (all references thereto being to the corresponding English language translation furnished herewith).

The claimed invention, as recited in claim 1, is a chlorinated vinyl chloride-based resin composition for use in injection molding in which from 2 to 9 parts by weight of an MBS resin and from 0.5 to 3 parts by weight of chlorinated polyethylene (CPE) are blended to 100 parts by weight of a chlorinated vinyl chloride-based resin with a chlorine content of from 62 to 70 % by weight obtained by post-chlorinating a vinyl chloride-based resin.

JP '782 exemplifies a post-chlorinated vinyl chloride resin composition in compliance with claim 1. See Example 7 of Table 2 (page 20), wherein a resin composition in which CPE and MBS are included, each at 2 parts by weight per 100 parts of CPVC HA-24K, is described. As defined on page 17, "CPVC HA-24K" refers to a commercial grade of chlorinated vinyl chloride resin characterized by an average

Art Unit: 1713

degree of polymerization of 700 and a chlorine content of 65 % by weight, which content falls fully within the range specified in claim 1.

As to claims 7 and 8: note that Example 7 reports a softening temperature of 112°C, and this value represents a Vicat softening temperature measured in accordance with JIS K7206 as per page 17, final sentence. As applicant also evaluates Vicat softening point according to JIS standards (*cf.*, Specification parag. 0034), there is a plausible basis for presuming the reported softening temperature corresponds to a softening point within claim 7. In any event, the identity in composition supports an inference that this property, as well as the utility recited in claim 8, inheres in the embodiment of JP '782 described in Example 7.

Claims 2-5, 9-11, 13-17, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-287782, alone or in view of US 4584349 (Lehr).

The discussion of JP '782 set out in the preceding rejection is incorporated by reference herein. Reference Example 7, as detailed above, differs from claim 3 in its use of a chlorinated vinyl chloride resin (CPVC) having an average degree of polymerization of 700 and a chlorine content of 65 % by weight. However, the utility of CPVC having an average degree of polymerization of preferably from 400 to 1,000, more preferably from 600 to 800, and a chlorine content of from 59 to 71 % by weight, preferably from 64 to 70 % by weight, is explicitly taught (see page 9, parags. 0013-0014). As the disclosed ranges substantially overlap the claimed values for these parameters, there would have been a reasonable expectation of CPVC having an

Art Unit: 1713

average degree of polymerization and chlorine content within claim 3 being successfully utilized in the reference composition. Accordingly, it would have been obvious to an ordinarily skilled practitioner at the time of applicant's invention to substitute the CPVC of Example 7 of JP '782 with one having a chlorine content and an average degree of polymerization as claimed.

As to claim 2, JP '782 contemplates the addition of processing aids (see parag. 0047) but does not disclose adding from 0.5 to 3 parts by weight of an acrylic resin for improving processability. Nevertheless, the concept of improving the melt processability of CPVC resin by blending therewith polymethymethacrylate (PMMA) resin is well known in the prior art as evidenced by Lehr. Indeed, Lehr specifically teaches that by blending between about 0 % to about 80 % by weight of PMMA with CPVC having a chlorine content of between about 60 % to about 66 % by weight, melt processability of the CPVC material is enhanced (Lehr: Abstract; col. 1, ll. 10-15; col. 2, ll. 45-51; and col. 11, claim 4). It would have been obvious to one of ordinary skill in the art to modify the resin composition of JP '782 through blending with a PMMA resin, motivated by a reasonable expectation of thereby improving melt processability as per Lehr. Further, since Lehr teaches adding PMMA in a weight percent range fully embrative of the claimed range and for the same purpose as applicant (improving processability), one of ordinary skill in the art would have been led to ascertain the optimum level of PMMA through routine experimentation. The normal desire of an artisan to improve upon what is already generally known provides the motivation to determine where in a disclosed

Art Unit: 1713

set of percentage ranges is the optimum combination of percentages. See, *In re Peterson*, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003).

As to claims 4, 10, 14, 16 and 20: although silent as to butadiene content of the "BTA-751" MBS resin used in its working examples, JP '782 mentions just three specific grades of MBS as impact improvement agents, viz., "BTA", "B-56" and "Metablen C" (see parag. 0019), of which B-56 is acknowledged as having been known to contain a butadiene content of 60 % or more and is the same MBS used by applicant (*cf.*, Specification parag. 0016). Given the limited number of alternative MBS resins mentioned in JP '782, one of ordinary skill in the art would have been inclined to utilize B-56 in lieu of BTA-751, resulting in a CPVC composition having a butadiene content as claimed.

Claims 1, 5, 8, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 8-113685 (JP '685) (all references thereto being to the corresponding English language translation furnished herewith).

JP '685 discloses heat-resistant vinyl chloride resin compositions which differ from the present composition only as to amount of CPE, i.e., 4.5 parts by weight instead of from 0.5 to 3 parts by weight, per claim 1. See the Application Examples in Table 2 (page 9) of the reference as well as Table 1 re CPE chlorine content. However, since the reference generically teaches a "servicing amount" of CPE restricted to 0.1-10 parts by weight and preferably 2-5 parts by weight per 100 parts by weight of CPVC (see parag. 0021), there would have been a reasonable expectation of lower amounts

Art Unit: 1713

yielding equivalent results. Given an expectation of equivalent performance, it would have been obvious to an ordinarily skilled practitioner at the time of applicant's invention to modify any of the specifically disclosed inventive compositions of JP '685 by reducing the level of CPE therein to an amount within the claimed range, e.g., 2 pts. by wt., and reasonably expect to obtain adequate results.

Claim 12 is objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

Claims 6 and 18 would be allowable if amended or rewritten to overcome the rejection under 35 U.S.C. 112 set forth in this Office action and to include all the limitations of the base claim and any intervening claim.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



Art Unit: 1713

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/06-07-07



**FRED TESKIN**  
**PRIMARY EXAMINED**  
1713